Lakeport Brewing Corporation

Hamilton, Ontario

"Lakeport Brewing Corporation is dedicated to conserving and protecting the environment, as well as improving our environment management practices. We at Lakeport are committed to improving its effluent quality, reducing energy consumption and using resources and raw materials in the most efficient and productive way. The green analysis of the Lakeport operation has been very helpful in these endeavors."

Adam Foye
Vice President of Operations
Lakeport Brewing Corporation

THE COMPANY

Lakeport is an medium-sized brewery located in the former Amstel plant in Hamilton. The company, which produces full strength and dealcoholized beers and beer products for sale in Ontario, Quebec and the U.S.A., has increased production steadily since it started up in 1992. Today, brewhouse and fermentation operations run almost constantly.

CHALLENGE

In 1994, Lakeport was faced with the challenge of becoming more cost competitive. Lakeport was interested in cutting its heavy consumption of electricity, natural gas and water as well as reducing the amount of effluent and solid waste it generated.

Lakeport selected Wardrop Engineering Corporation of Mississauga, Ontario, an engineering consultant with considerable experience in the brewing industry, to perform a green industrial analysis. The analysis was intended to help Lakeport set priorities and make plans for implementing capital and operational projects related to "green" opportunities.

Wardrop's task was to identify, analyze and recommend appropriate opportunities for reducing the amount of energy and water Lakeport used and the amount of effluent and solid waste it generated. The green analysis was to find ways to make Lakeport's processes more efficient in order to conserve resources and to protect the environment.

OPPORTUNITIES

The analysis focused on the following processes which management considered a high priority:

* reducing water and energy use;
* reducing the amount of solid waste generated;
* reducing the biological oxygen demand (BOD) and solids in the effluent;
* reducing the use of cleaning chemicals;
* increasing the amount of product recovered.

Although Lakeport had been pursuing green opportunities in the plant, the study revealed 29 new opportunities. According to the report, Lakeport could reduce its water use by 41 per cent, gas use by 16 per cent and electricity use by 37 per cent.

POTENTIAL SAVINGS

The estimated potential annual savings if Lakeport implements all the recommendations are:

* Electricity	$ 130,900
* Natural gas	$ 29,749
* Water	$ 115,635
* Liquid effluent	$ 38,433
* Chemical treatment	$ 7,090
* Product recovery	$ 361,530
Total	**$ 683,337**

The savings would require an initial capital investment of $1,858,600.

RECOMMENDATIONS

The consultant made the following major recommendations in the Green Analysis Report:

1. *Centritherm Free Cooling:*
   Lakeport could reduce the amount of water it uses by replacing the once-though city water cooling system now in place with a cooling tower and a recirculating system. The capital cost would be $66,600. But annual water savings would be about $44,400 with a payback period of 1.5 years.

2. *Pasteurizer and Vaporizer Water Use Reductions:*
   Lakeport could redirect water which it uses in other processes and which is now wasted to clean the pasteurizer and vaporizer. The capital cost would be $40,000. But the water savings would be about $57,952 a year with a payback period of about eight or nine months.

3. *Install Centrifuge to Reduce Green Beer Loss*
   By installing a high-speed centrifugal separator for green beer, Lakeport could recover more of its product and reduce the amount of yeast lost to waste. That would lower the BOD in the effluent. Lakeport would need to make a capital investment of $500,000. But, the savings would be about $265,173 a year with a payback period of 1.9 years.

4. *Trub Recovery*
   If Lakeport installed a centrifuge to dry trub and recover some wort, the company could reduce the BOD and total suspended solids in the effluent. The capital cost would be about $400,000. But the annual savings would be about $96,846 with a payback period of 4.1 years. Lakeport has already started implementing a number of these recommendations.

The report identified the use of centrifuges for recovering more product and controlling the BOD in the effluent as a technology which could be developed on its own as a business.

These improvements could be duplicated in Ontario's older breweries, particularly in plants which require re-engineering to update or modify their operations.

PARTNERSHIP IN POLLUTION PREVENTION AND RESOURCE CONSERVATION

Industrial companies located in Ontario may seek ministry/industry services that will help them to:

* use energy and water more efficiently;
* reduce, reuse and recycle solid waste;
* reduce or eliminate liquid effluent and gaseous emissions.

Equipment and services supply companies can benefit from the information provided on technologies identified for business development.

FOR MORE INFORMATION, PLEASE CONTACT:

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MINISTRY OF ENVIRONMENT AND ENERGY SERVICES

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